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EXAMINER	
GORDON, BRIAN R	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,871	KITAMURA, SHIGERU	
	Examiner	Art Unit	
	Brian R. Gordon	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim is directed to a method. A claimed method is defined by clearly recited steps after the transitional phrase (comprising, consisting of, etc.). Claim 1 does not include a transitional phrase and further does not clearly recite and method steps.

Claims 2-5, and 8 are directed to structural limitations of the analyzing instrument that appears to be intended to be used in the method and process limitations.

As to claim 2 it is unclear how the heating layer heats the liquid. Is the liquid located on the heating layer?

As to claims 3, 4, and 10-12, the term "thin" is relative. What one person may consider thin another may not.

As to claims 8 and 17, the term "tiny" is relative. What one person may consider tiny another may not.

As to claim 5, it is unclear what the relationship of the reaction zone to the method is. Furthermore it is unclear if the sample and reagent in the claim are involved in the method. It appears as if the sample and reagent are mentioned to describe the intended use of the reaction zone rather than to be included in the method.

As to claim 6 it is unclear if this is a further step in the method. Furthermore it is unclear what is meant by "the liquid is controlled". How or in what aspect is the liquid controlled.

As to claim 8, it is unclear what the relationship of "a sample" to the liquid of claim 1 is.

As to claim 1, it is unclear an analyzing instrument can only be made up of a single element, a heating layer. The "which" clause is not further limiting, but is directed to intended use.

As to claim 13, it is unclear what the structural relationship of the reaction zone relative to the heating layer is. Is the zone located on the layer or vice versa? Is the zone an element of the layer or vice versa? What is the relative location of the elements? The sample and reagent are not positively claimed as elements of the device. There is no antecedent basis for "the liquid present".

As to claim 16, it is unclear how the heating layer is formed in the reaction zone, When the heating layer is said to heat the reaction zone.

Claim 18 is directed to a temperature detecting analyzing apparatus. However, the only element required is a magnetic generating coil. There is not detecting analyzing element positively claimed. It should be noted the remaining portion of the claim is narrative and directed to intended use.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Dietze et al. US 5,035,862.

Dietze et al. disclose rapid and selective temperature conditioning of the test fields of test carriers is accomplished with an analytical system in which the test carrier has at least one metallic conducting layer that is assigned to the test field, runs parallel to the test field and is in thermal contact with it. The evaluating instrument has an induction heater that produces an alternating magnetic field, and the guiding system of the test carrier in the evaluating instrument is designed so that the metallic conducting layer is in the effective region of the alternating magnetic field at least before the measurement.

The metallic conducting layer may, for example, comprise a metallized plastic. Particularly simple and well suited is a metal foil, especially of aluminum or copper, with a thickness of less than 0.5 mm. (column 1, line 63 - column 2, line 9).

In FIG. 1, a magnetic field emanates from the induction heater 13, when an alternating current flows through coil 13b of heater 13. The corresponding test field of a test strip, lying on positions 10 and 11, is in the working area of the alternating magnetic field emanating from the induction heaters 14, 15. Generally the metallic conducting layer 12 has to be in the working area of the magnetic field in the sense that it has to be positioned in the range of that field such that an effective heating is achieved due to the electric current inductively generated by the field. Preferably the distance between the

coil 13b and the metal foil 12 should be as short as possible. In practice, a distance of 3 to 5 mm has proven especially satisfactory.(column 3, lines 35-50).

The test field 20 comprises a reagent layer 20a (reaction zone) and backing paper 20b. The test field 21 comprises a reagent layer 21a and a backing paper 21b. Underneath, there is a metal foil 21c. The test field 22 comprises only the reagent layer 22a. A metal foil 23c is clamped below the reagent layer 23a of the test field 23.

The device includes an evaluating instrument for controlling the device.

A voltage supplier is inherent for supplying an electrical current to the coil of the device.

5. Claims 1-3, 5-7, 9-11, and 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Armor US 5,240,674.

Armor discloses a waterpipe 1 colonized by mollusks, and wrapped by a number of turns of an electrical conductor 2 (coil). The conductor is connected to an AC source 3, such as a motor generator, which supplies a magnetic flux field to the metal pipe 1, which causes eddy currents to flow on the pipe resulting in pipe heating. This causes the inner surface of pipe 1 and the layer of water adjacent to the surface to quickly reach the killing temperature of 90.degree. F. and above.

The method is applicable to any component, duct, pipe, water box, heat exchanger, or tube bundle which is metallic such as the following materials commonly used in power plants: carbon steel, cast iron, stainless steel, copper nickel, aluminum bronze and admiralty brass.

Referring to FIG. 2 there is shown a cross-section of the pipe 1 given across line 2--2 in FIG. 1. An imbedded thermocouple 5 (detector) in the pipe 1 is used to detect the temperature of the pipe. This thermocouple may be electrically connected (not shown) to a power generating unit (not shown) to turn the unit off after the killing temperature has been maintained for a sufficient period of time.

In FIG. 3, there is shown a diagram of an automatic controlling and heating module for heating a section of pipe or other equipment according to the present invention. The induction coils 10 surrounding the pipe or equipment (not shown) will be powered by an AC power source 11. The power source will be controlled by a control unit 12 comprising a thermostat and timer which may be set to turn on the power source at a designated power level at pre-set times. A thermocouple 13 will be connected to the control unit 12 and will be typically embedded in the pipe or equipment, as shown by 5 in FIG. 2. The thermocouple 13 is utilized to maintain the pipe or equipment at the appropriate temperature for the requisite period of time.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanori et al. JP 2002-90357.

Takanori et al disclose a method whereby the temperature of a liquid component held within an analysis instrument for analyzing a sample is adjusted to a target temperature, wherein: when heating the liquid component, the thermal energy that is generated by passing a magnetic force line through the analysis instrument is supplied to the liquid component; the analysis instrument comprises a heat generating layer that generates heat as a result of the passage of the magnetic force line; and the liquid component is heated using the thermal energy from the generation of heat by the heat generating layer.

In addition, methods for adjusting the temperature of a liquid component wherein the heat generating layer is formed from a metallic thin film are well known, and it is common practice for a person skilled in the art to design said heat generation layer from a material such as aluminum, nickel or copper and to establish the film thickness thereof with consideration of the heating rate, the stoving temperature or the like of the sample.

Takanori et al. discloses a feature wherein the analysis instrument heats the liquid component that is present in the reaction part; a feature wherein the temperature of the liquid component is adjusted by monitoring the temperature of the Liquid component while using the results from monitoring as feedback in order to control the

passage of the magnetic force lines in the analysis instrument; and a feature wherein the analysis instrument is a micro-device that can be used to analyze minute samples.

Herein, with regards to adjusting the temperature of the liquid component, the feature of pre-establishing the relationship between the ambient temperature in the vicinity of the liquid component and the passage of the magnetic force line in the analysis instrument, which is necessary to heat the liquid component to the target temperature, then determining the control conditions that are necessary in order for the magnetic force line to pass through in a desired manner based upon the measured ambient temperature and the relationship and controlling the passage of the magnetic force line in the analysis instrument according to the control conditions in question is merely an arbitrary actualization of the feature wherein the temperature of the liquid component is adjusted by monitoring the temperature of the liquid component while using the results from monitoring as feedback in order to control the passage of the magnetic force lines in the analysis instrument, as disclosed, by an ordinarily skilled person in the art.

Consequently, the invention set forth in claims 1-8 could easily have been conceived of by a person skilled in the art in the light of the invention disclosed in by Takanori et al. and the well-known feature.

The invention set forth in claims 9-13 and 17 could easily have been conceived of by a person skilled in the art in the light of the invention disclosed in Takanori and the well-known feature, for the same reasons as indicated above.

In addition, the position where the heat generation layer is formed within the reaction part is merely a design matter that can be configured by a person skilled in the art, as appropriate; therefore, the invention set forth in claims 14-16 could easily have been conceived of by a person skilled in the art in the light of the invention disclosed in Takanori.

It would be obvious to provide the invention that is disclosed in document 1 with a magnetic force line generating coil for generating the magnetic force lines that are passed through the analysis instrument, a temperature measurement means for measuring the temperature of the liquid component or the ambient temperature in the vicinity of the liquid component, and a control means for controlling the generation of the magnetic force line by the magnetic force line generating coil on the basis of the results of the measurements by the temperature measurement means. In addition, analysis devices provided with a temperature adjustment function, wherein a magnetic force line generating coil is used to generate magnetic force lines, are well known.

Consequently, the invention set forth in claims 18-20 could easily have been conceived of by a person skilled in the art in the light of the invention disclosed in Takanori and the various well-known features indicated above.

The Applicant is advised that the Supreme Court recently clarified that a claim can be proved obvious merely by showing that the combination of known elements was obvious to try. In this regard, the Supreme Court explained that, "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has a good reason to

pursue the known options within his or her technical grasp." An obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of the case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not. The combination of familiar elements is likely to be obvious when it does no more than yield predictable results. Furthermore, the simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l v. Teleflex Inc.*, 127 Sup. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007) (see MPEP § 2143).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yokota, Koji; Roberts; Peter C. et al.; Ikeda; Katsunori et al.; Gordon; Gary B.; Ullman; Edwin F. et al.; Patil; Sanjay L. et al.; Barclay; David Allan et al.; Kawamura; Tatsurou et al.; Schiffmann; Robert Frank et al.; Revesz; Robert N.; Collins; Michael J. et al.; Zakaria; Zairani et al.; Derbyshire; Rodney L.; and Ozawa; Shoichi et al. disclose devices and method involving magnetic fields.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, 1st Fri. Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian R Gordon/
Primary Examiner
Art Unit 1797